

Application Number 10/527354
Response to the Office Action dated May 29, 2008

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Applicants note that the Office Action mailed May 29, 2008 does not address claims 36-43, which were added in the Preliminary Amendment filed on March 10, 2005, and this was mentioned in the remarks filed on February 4, 2008. Therefore, this Office Action should not be final.

Claims 1, 2, and 32 have been amended to remove La, Ce, and Pr from the group of elements for M1 in previously presented these claims. Other elements listed for M1 in claim 1 than La, Ce, and Pr are also supported by samples in the specification (see tables 1-6 of the specification at pages 65 (tables 1 and 2), 69, 70, 79, and 81, respectively).

Claims 1-3, 5-10, 12, 13, 15, 32, 33, and 35 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka et al. (U.S. Patent Application Publication No. 2002/0160306) in view of Morimoto et al. (U.S. Patent No. 5,221,588). Applicants respectfully traverse this rejection.

Hanaoka discloses use of Sb, Bi, and Te as crystallization acceleration materials, use of Ge, Cu, In, B, and N as record stabilization materials, inclusion of a combination of the crystallization acceleration materials and the record stabilization materials in the crystallization acceleration layer such as Bi and Ge, and further, 41 elements as impurity elements of the crystallization acceleration layer (see paras. [0099]-[0103]). In contrast, claim 1 requires M1 at least one element selected from Sc, Y, Nd, Sm, Gd, Tb, Dy, Ho, Er, Yb, and Lu. Hanaoka merely lists Groups IV, IB, III, and V and Groups V and VI as record stabilization materials and crystallization acceleration materials, respectively, and fails to disclose use of specific elements in these groups in the crystallization acceleration layer other than elements listed above, i.e., Sb, Bi, and Te as the crystallization acceleration materials, Ge, Cu, In, B, and N as the record stabilization materials, and 41

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impurity materials (see paras. [0077] and [0099]-[0100] and tables 1, 3, 5, 7, 9, and 11). None of Ge, Cu, In, Sb, N, and the 41 impurity materials is listed as a material for M1 in claim 1. By including this combination of Bi, Te, and M1 of claim 1 in the crystalline nucleation layer, the information recording medium of the present application provides, at a high transfer rate, an excellent information erasing rate and excellent archival overwriting characteristics as well as, at a low transfer rate, excellent archival characteristics and an excellent repeated rewriting capability, simultaneously (see page 8, line 37 – page 9, line 10 of the specification). In addition, Hanaoka does not disclose a recording layer having $\text{Ge}_a(\text{M2})_b\text{Te}_{3+a}$, where M2 is selected from Sb and Bi and the ranges of a and b are $2 \leq a \leq 50$ and $2 \leq b \leq 4$.

Morimoto addresses a composition of the recording layer and does not remedy the deficiencies of Hanaoka regarding the crystalline nucleation layer. In addition, Morimoto discloses use of Te, Ge, Sb and M in a recording layer, where M is at least one element selected from Pb, Bi, In, Sn, and Tl (see coln. 4, lines 28-48), but the ratios disclosed by Morimoto do not satisfy the ratio as claim 1 requires (see table 2 at coln. 11). Further, the reference requires both Sb and M such as Bi in the recording layer (see coln. 4, lines 49-52). In Morimoto, the recording medium that includes only Sb together with Te and Ge in the recording layer at the ratio disclosed by the reference causes a serious problem, for example, difficulties of amorphization of the recording layer, for example, deformation of the recording layer and the substrate or perforation of the recording layer, would occur (see coln. 4, line 49 – coln 5, line 10). In contrast, even when the recording layer of claim 1 contains only Ge, Sb, and Te at the required ratio, an information recording medium including such a recording layer shows excellent recording sensitivity and excellent recording/rewriting capability (see example 4 at page 73, line 30 – page 74, line 7 of the specification). This demonstrates the difference between the recording layer of claim 1 and that of Morimoto.

Accordingly, claim 1 is distinguished from Hanaoka in view of Morimoto, and this rejection should be withdrawn.

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Claims 4 and 34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka et al. (U.S. Patent Application Publication No. 2002/0160306). Applicants respectfully traverse this rejection.

Claims 4 and 34 are distinguished from Hanaoka for at least the same reasons as discussed for claim 1 above. Accordingly, this rejection should be withdrawn. Applicants do not concede the correctness of this rejection.

Claims 14, 17, 20-22, and 25-26 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka et al. (U.S. Patent Application Publication No. 2002/0160306) in view of Nishihara et al. (U.S. Patent No. 6,670,014). Applicants respectfully traverse this rejection.

Claims 14, 17, 20-22, and 25-26 are distinguished from Hanaoka for at least the same reasons as discussed for claim 1 above. Nishihara does not remedy the deficiencies of Hanaoka. Accordingly, claims 14, 17, 20-22, and 25-26 are distinguished from Hanaoka in view of Nishihara, and this rejection should be withdrawn. Applicants do not concede the correctness of this rejection.

Claim 16 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka et al. (U.S. Patent Application Publication No. 2002/0160306) in view of Kitaura et al. (U.S. Patent No. 6,432,502). Applicants respectfully traverse this rejection.

Claim 16 is distinguished from Hanaoka for at least the same reasons as discussed for claim 1 above. Kitaura discloses the recording layer that includes Ge, Sb, and Te but at the different ratio from that of claim 1 (see coln. 2, lines 25-31, coln. 3, lines 13-17, and coln. 4, lines 17-38) and the crystalline nucleation layer that contains Sn-Te or Pb-Te, which does not include M1 as required by claim 1 (see coln. 5, lines 3-18, coln. 9, lines 43-45, and coln. 14, lines 3-11). Thus, Kitaura does not remedy the deficiencies of Hanaoka. Accordingly, claim 16 is distinguished from Hanaoka in view of Kitaura, and this rejection should be withdrawn. Applicants do not concede the correctness of this rejection.

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Claims 27-31 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka et al. (U.S. Patent Application Publication No. 2002/0160306) in view of Nishihara et al. (U.S. Patent No. 6,670,014) and further in view of Hirotsune et al. (U.S. Patent No. 6,723,411). Applicants respectfully traverse this rejection.

Claims 27-31 are distinguished from Hanaoka in view of Nishihara for at least the same reasons as discussed for claim 1 above. Hirotsune does not remedy the deficiencies of Hanaoka and Nishihara. Accordingly, this rejection should be withdrawn. Applicants do not concede the correctness of this rejection.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.



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DPM/my/ad

Respectfully submitted,

HAMRE, SCHUMANN, MUELLER &
LARSON, P.C.
P.O. Box 2902
Minneapolis, MN 55402-0902
(612) 455-3800

By: 

Douglas P. Mueller
Reg. No. 30,300